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09/938,536	08/27/2001	Jeong Kwon Lee	P-199	2797

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EXAMINER

HOLLAR, ANDREA B

ART UNIT	PAPER NUMBER
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2142

DATE MAILED: 12/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/938,536

Applicant(s)

LEE, JEONG KWON

Examiner

Andrea B. Hollar

Art Unit

2142

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☒ Claim(s) 1, 19 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities:

Reference number 11 is recited with reference to "the built in CPU" in par. 7, line 1; par. 11, line 1; and par. 32, line 1. In fig. 2, reference number 11 corresponds to "serial communication controller".

The names for the item referenced by number 11 should match in the specification and the drawings.

In par. 34, line 2, reference number 24 is recited with reference to "PDL". It is assumed that this is a typographical error and that "PLD" was intended.

In par. 34, line 5 and par. 37, lines 3 and 4, the reference numbers 26 and 27 each refer to two different structures. In par. 34, reference number 26 refers to "R1" and reference number 27 refers to "R2". In par. 37, reference number 26 refers to "a protocol mode line" and reference number 27 refers to "a cable state sensing line". The reference numbers 26 and 27 should each only reference one item.

In par. 36, line 4, the word "recognizes" should be "recognize" and is assumed to be a typographical error.

Appropriate correction is required.

Claim Objections

Claims 1 and 20 are objected to because of the following informalities: "the communication environment of a connection network" lacks antecedence. Appropriate correction is required.

Claim 1 is objected to because of the following informalities: "the sensed information" lacks antecedence. Appropriate correction is required.

Claim 19 is objected to because of the following informalities: "the power" lacks antecedence. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 16 recites the limitation "the stated information" in line 11. There is insufficient antecedent basis for this limitation in the claim.

Claims 8, 9, and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The use of conditional statements using the word "if" renders the claims unclear. It is unknown whether applicant intends to claim the material in the conditional statements. For the purposes of examination, all conditional statements are assumed to evaluate as false.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 6, 8-11, 13-17, 19-23, 26, and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Shetty.

With respect to claim 1, Shetty discloses an apparatus comprising:

a connector configured to provide a connection port to a data circuit terminating equipment (fig. 2A, item 116; col. 3, lines 23-25);

a multi-protocol transceiver coupled to the connector and configured to transmit and receive a plurality of protocol signals through the connector (fig. 2A, item 220A);

a CPU having a serial communication control function coupled to the multi-protocol transceiver to process data according to the communication environment of a connection network (fig. 2A, item 140);
and

a programmable logic device (PLD) coupled to sense a change in a connection state of the connector through a prescribed control line and to transfer the sensed information to the CPU (fig. 2A, items 202 and 110; col. 17, lines 66-67 – col. 18, line 1; col. 18, lines 26-32).

With respect to claim 2, Shetty discloses that the prescribed control line comprises an interrupt request (IRQ) signal line (col. 6, line 21), an acknowledgement (ACK) signal line (col. 17, line 17), a chip select (CS) signal line (col. 6, line 26), a protocol mode line (col. 13, lines 51-54), and a cable state sensing line (col. 17, lines 39-41).

With respect to claim 3, Shetty discloses that the IRQ signal line, the ACK signal line, and the CS signal line are coupled between the PLD and the CPU (fig. 2A, item 146; col. 5, lines 65-67 – col. 6, lines 1-7) and that the protocol mode line and the cable state sensing line are coupled between the PLD and the connector (fig. 2A, item 110).

With respect to claim 4, Shetty discloses that the IRQ signal line and the ACK signal line comprise a control line (fig. 2A, item 146) to carry information to the CPU indicating a change in the connection state of the connector, wherein the state is one of connection and disconnection (col. 17, lines 39-41, col. 6, lines 20-23, col. 17, lines 50-52).

With respect to claim 6, Shetty discloses that the PLD uses a pull-up resistor to determine a hardware protocol (col. 13, lines 51-54).

With respect to claim 8, Shetty discloses a method comprising:

sensing a change in a connection state of a connector (fig. 2A, item 116) between a router (fig. 2A, item 101; could perform routing functions) and a data circuit terminating equipment (DTE) (fig. 2A, item 122; col. 17, lines 39-41);

initializing parts of the router and normalizing communication environments based on the sensing information (col. 8, lines 54-58).

With respect to claim 9, Shetty discloses that sensing the change in the connection state of the connector comprises sensing a change of a connected or disconnected state of the connector (col. 17, line 41).

With respect to claim 10, Shetty discloses that the connected state is determined by a low logic state of a prescribed connection pin of the connector and the disconnected state is determined by a high logic state of the prescribed connection pin of the connector (col. 17, lines 47-50).

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With respect to claim 11, Shetty discloses that a programmable logic device (PLD) senses the change of state and transfers the sensed information to the CPU (col. 17, lines 50-52).

With respect to claim 13, Shetty discloses that the PLD uses a pull-up resistor to determine a hardware protocol (col. 13, lines 51-54).

With respect to claim 14, Shetty discloses that transferring the sensing information to the internal CPU comprises:

transmitting an interrupt request (IRQ) signal to the CPU if the change in the connection state of the connector is sensed (col. 17, lines 39-41; col. 6, lines 20-23; col. 17, lines 50-52).

sending an acknowledgement signal from the CPU (col. 17, line 17) and requesting that a hardware protocol mode value be transmitted to the CPU (col. 17, lines 39-41); and

transmitting a protocol connection mode value to the CPU (col. 17, lines 50-52).

With respect to claim 15, Shetty discloses that a programmable logic device sends the IRQ signal (col. 6, lines 20-23; col. 17, lines 50-52) and the protocol connection mode value to the CPU (col. 17, lines 50-52).

With respect to claim 16, Shetty discloses a method comprising:

sensing a connection and disconnection state of a connector configured to connect to a data circuit terminating equipment (DCE) by a programmable logic device (PLD) (col. 17, lines 39-41; col. 17, lines 50-52);

sending an interrupt request signal to a CPU to inform the CPU of the change in the state of the connector (col. 6, lines 20-23; col. 17, lines 50-52);

sending a response to the interrupt request signal from the CPU to the PLD to request the PLD to send a hardware protocol mode value to the CPU (col. 6, lines 20-23; col. 17, lines 50-55);

transmitting the hardware protocol mode value from the PLD to the CPU (col. 17, lines 50-52);

and

initializing parts of the router and normalizing a communication environment based on the stated information (col. 17, lines 60-61).

With respect to claim 17, Shetty discloses that the hardware protocol is determined by at least one of the PLD and the CPU (col. 13, lines 51-54; col. 12, lines 63-65).

With respect to claim 19, Shetty discloses that the router is configured to automatically sense a change in hardware protocol without switching off the power to the router (col. 17, lines 39-41; col. 17, lines 50-52).

With respect to claim 20, Shetty discloses a data terminal equipment (DTE) device comprising:
a connector configured to provide a connection port to a data circuit terminating equipment (DCE) (fig. 2A, item 116; col. 3, lines 23-25);

a multi-protocol processor (fig. 2A, item 204) coupled to the connector and configured to transmit and receive two or more protocol signals through the connector (fig. 2A, item 110) and to initialize parts of the DTE after a connection of the connector to the DCE while power to the DTE is maintained (col. 8, lines 54-58); and

a CPU having a serial communication control function coupled to the multi-protocol processor to process data according to the communication environment of a connection network (fig. 2A, item 140).

With respect to claim 21, Shetty discloses that the multi-protocol processor comprises:
a multi-protocol transceiver to transmit and receive signals through the connector (fig. 2A, item 220A); and

a connection discrimination unit to initialize parts of the DTE based on the connection state of the connector (fig. 2A, item 202; col. 8, lines 54-58; col. 17, lines 39-41; col. 17, lines 60-61).

With respect to claim 22, Shetty discloses that the connection discrimination unit comprises:
a programmable logic device (PLD) (fig. 2A, item 204) coupled to receive connection state and hardware protocol information from the connector (col. 17, lines 39-41; col. 17, lines 50-51) and transmit an interrupt request (IRQ) signal to the CPU in accordance with the state and protocol information (col. 17, lines 50-55).

With respect to claim 23, Shetty discloses that the PLD further transmits a protocol mode value (col. 17, lines 50-52) to the CPU after receiving an acknowledgement to the IRQ from the CPU (col. 17, lines 54-55).

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With respect to claim 26, Shetty discloses that the PLD is coupled to the connector using a protocol mode line (col. 13, lines 51-54) and a state sensing line (col. 17, lines 39-41) (fig. 2A, item 110), and that the PLD is coupled to the CPU using an IRQ signal line (col. 6, line 21), an ACK signal line (col. 17, line 17), and a data line (col. 6, line 26) (fig. 2A, item 146; col. 5, lines 65-67 – col. 6, lines 1-7).

With respect to claim 27, Shetty discloses at least one resistor coupled between the connector and the multi-protocol processor to sense at least one of a state of a cable between the connector and the multi-protocol processor and a protocol mode (col. 13, lines 51-54; col. 12, lines 63-65).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5, 12, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shetty in view of Yoshimura.

With respect to claims 5 and 12, Shetty does not expressly disclose that the PLD uses a pull-up resistor to sense a connection and disconnection state of the connector; however Yoshimura teaches that it is known that a pull-up resistor can be used to detect a state of connection or disconnection in a connector (col. 2, lines 57-60).

Shetty and Yoshimura are analogous art because they are both from the same field of endeavor of computer interface circuits.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to equip Shetty's connector with the ability to use a pull-up resistor to detect a state of connection and disconnection.

The motivation for doing so would have been to provide a simple way to determine whether a card is inserted into the connector slot or not (col. 2, lines 61-62).

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Therefore, it would have been obvious to combine Yoshimura with Shetty for the benefit of detector simplicity to obtain the inventions as specified in claims 5 and 12.

With respect to claim 24, Shetty discloses that a first pull-up resistor is used to determine the hardware protocol information (col. 13, lines 51-54), however Shetty does not expressly disclose a second pull-up resistor that is used to determine the connection state.

Yoshimura teaches that it is known that a pull-up resistor can be used to detect a state of connection or disconnection in a connector (col. 2, lines 57-60).

Shetty and Yoshimura are analogous art because they are both from the same field of endeavor of computer interface circuits.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to equip Shetty's connector with the ability to use a pull-up resistor to detect a state of connection and disconnection.

The motivation for doing so would have been to provide a simple way to determine whether a card is inserted into the connector slot or not (col. 2, lines 61-62).

Therefore, it would have been obvious to combine Yoshimura with Shetty for the benefit of detector simplicity to obtain the invention as specified in claim 24.

Claims 7, 18, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shetty in view of Ketelhut.

With respect to claim 7, Shetty does not expressly disclose a transient voltage suppressor (TVS) coupled to absorb an electric shock generated upon connecting or disconnecting the connector with a corresponding receptacle.

With respect to claim 18, Shetty does not expressly disclose absorbing an electrical shock generated during connection and disconnection of the router.

With respect to claim 25, Shetty does not expressly disclose that the connection discrimination unit further comprises a transient voltage suppressor, coupled to the connector to absorb an electrical shock generated upon connecting the connector during operation of the DTE.

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Ketelhut discloses that it is known that a transient voltage suppressor can be used across the input port or connector of a device (fig. 7C, item 185; col. 12, lines 60-64).

Shetty and Ketelhut are analogous art because they are both from the same field of endeavor of input/output systems.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to connect a transient voltage suppressor in conjunction with Shetty's connector.

The motivation for doing so would have been to prevent an unwanted electrical shock when inserting or removing Shetty's PCMCIA cards while the power is still on at the receiving device.

Therefore, it would have been obvious to combine Ketelhut with Shetty for the benefit of preventing unwanted electrical shock to obtain the inventions as specified in claims 7, 18, and 25.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrea Hollar whose telephone number is (571) 272-5862. The examiner can normally be reached on 8:30-6:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack B. Harvey can be reached on (571) 272-3896. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ABH

Shetty, Paul
Pat. Examiner
12/07/04